THAT WHICH IS CLAIMED IS:

1. A rectifier for an alternator comprising:

an integrally formed rectifier body having a ground engaging surface that mounts within an alternator and is grounded through an automotive grounding system and a diode receiving cavity opposite the ground engaging surface;

a plurality of negative diodes secured within the diode receiving cavity and grounded thereto;

an insulated conductive substrate positioned in the diode receiving cavity and having a conductive surface that is insulated from the rectifier body;

a plurality of positive diodes positioned on the insulated conductive substrate; and

a terminal connector interconnecting negative and positive diodes in an electrical rectifying configuration.

2. A rectifier according to Claim 1, wherein said insulated conductive substrate comprises a dielectric layer and circuit layer thereon on which the positive diodes are secured.

3. A rectifier according to Claim 2, and further comprising a metal base layer secured on the dielectric layer opposite the circuit layer.

4. A rectifier according to Claim 1, wherein said insulated conductive substrate comprises a fiberglass reinforced bond ply material having a metal layer on both sides.

5. A rectifier according to Claim 4, wherein each metal layer comprises a copper layer.

6. A rectifier according to Claim 1, and further comprising a capacitor secured within the diode receiving cavity and operatively connected to the negative diodes.

7. A rectifier according to Claim 1, and further comprising an epoxy filler disposed within the diode receiving cavity and covering the diodes to protect and insulate same.

8. A rectifier according to Claim 1, and further comprising cooling fins formed on the rectifier body.

9. A rectifier according to Claim 1, and further comprising a connector housing that connects the terminal connectors and receiving a wiring harness.

10. A rectifier according to Claim 1, and further comprising a terminal connector secured to the insulated conductive substrate and having a terminal that connects to a wiring harness.

11. A rectifier assembly according to Claim 10, wherein said terminal connector includes dual terminals that connect to a wiring harness.

12. A rectifier according to Clam 1, wherein said rectifier body is formed from cast aluminum.

13. A rectifier for an alternator comprising:

an integrally formed, metallic rectifier body having an outer coding surface and a planar configured ground engaging surface that is configured for mounting within an alternator and being grounded through an automotive grounding system and provide a heat sink surface, a diode receiving cavity opposite the ground engaging surface, and a plurality of cooling fins formed on the outer surface of the rectifier body to enhance cooling of the rectifier body;

a plurality of negative diodes secured within the diode receiving cavity and grounded thereto;

an insulated conductive substrate positioned in the diode receiving cavity and having a conductive surface that is insulated from the rectifier body;

a plurality of positive diodes secured on the insulated conductive substrate;

a terminal connector interconnecting negative and positive diodes in an electrical rectifying configuration; and

a connector housing secured to the rectifier body that connects the terminal connector and receives a wiring harness.

14. A rectifier according to Claim 13, wherein said insulated conductive substrate comprises a dielectric layer and circuit layer thereon on which the positive diodes are secured.

15. A rectifier according to Claim 14, and further comprising a metal base layer secured on the dielectric layer opposite the circuit layer.

16. A rectifier according to Claim 13, wherein said insulated conductive substrate comprises a fiberglass reinforced bond ply material having a metal layer on both sides.

17. A rectifier according to Claim 16, wherein each metal layer comprises a copper layer.

18. A rectifier according to Claim 13, and further comprising a capacitor secured within the diode receiving cavity and operatively connected to positive and negative diodes.

19. A rectifier according to Claim 13, and further comprising an epoxy filler disposed within the diode receiving cavity and covering the diodes to protect and insulate same.

20. A rectifier according to Claim 13, and further comprising a terminal connector secured to the insulated conductive substrate and having a terminal that connects a wiring harness.

21. A rectifier assembly according to Claim 20, wherein said terminal connector includes dual terminals that connect a wiring harness.

22. A rectifier according to Claim 13, wherein said rectifier body is formed from cast aluminum.

23. A method of forming a rectifier for an alternator comprising the steps of:

securing an insulated conductive substrate within a diode receiving cavity of an integrally formed

rectifier body having a ground engaging surface opposite the diode receiving cavity where the ground engaging surface mounts within an alternator and is grounded through an automotive grounding system;

inserting the leads of positive and negative diodes within a terminal connector that interconnects same; and

inserting the interconnected positive and negative diodes within the diode receiving cavity such that negative diodes engage the rectifier body and are grounded thereto and positive diodes engage the insulated conductive substrate and are insulated from the negative diodes and ground engaging surface.

24. A method according to Claim 23, and further comprising the step of securing the negative and positive electrodes within the diode receiving cavity by applying solder paste to the rectifier body within the diode receiving cavity and onto the insulated conductive substrate and securing the negative and positive diodes thereto.

25. A method according to Claim 23, and further comprising the step of securing a capacitor within the diode receiving cavity such that the capacitor is operatively connected to the negative and positive diodes.

26. A method according to Claim 23, and further comprising the step of filling the diode receiving cavity with an epoxy filler after the diodes are secured therein.

27. A method according to Claim 23, and further comprising the step of reflow soldering the rectifier in a solder oven for final assembly.

28. A method according to Claim 23, and further comprising the step of inserting a connector housing over the terminal connector, wherein the connector housing has a connection for receiving a wiring harness and establishing electrical contact with the terminal connector.

29. A method according to Claim 23, and further comprising the step of securing a terminal connector to the insulated conductive substrate and having a terminal for connecting to a wiring harness.